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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/017,458      | 12/12/2001  | Xiaojun Wang         | 0011-051            | 5293             |

7590 11/04/2003  
Larry E. Henneman, Jr  
Henneman & Saunders  
714 W. MICHIGAN Avenue  
Three Rivers, MI 49093

EXAMINER

LUHRS, MICHAEL K

ART UNIT PAPER NUMBER

2824

DATE MAILED: 11/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/017,458

Applicant(s)

WANG, XIAOJUN

Examiner

Michael K. Luhrs

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-10,13,23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-10,13,23 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6, 8-10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motoyama et. al. USPN 6,099,992 in view of Eden et. al. USPN 5,278,105.

Regarding claim 1, Motoyama et. al. teach margin area W, between active circuitry 21 and dummy region 22 in Fig. 5A as described in lines 26-27 column 7; Motoyama et. al. add dummy pattern as a square repeating pattern that ends at the width W, of the margin, is thus trimmed at that location, results in the gap between area 22 and 21; with final overlay as shown in Fig. 5E. Motoyama et. al. fail to teach the selection of the dummy metal fill pattern of alternative functional circuitry. Eden et. al. teach dummy features 50 similar in size and shape to other metal lines (lines 41-42 column 6) for the purpose of reducing loading effect (line 34, column 6, Eden et. al.). Dummy features similar in size and shape to other metal lines is alternative functional circuitry. Since Eden et. al. and Motoyama et. al. are all from the same field of endeavor, the purpose disclosed by Eden et. al. would have been recognized in the pertinent art of Motoyama et. al.. It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute Eden et. al.'s dummy features for the reticular pattern generated dummy features taught by Motoyama et. al..

Regarding claim 2, Motoyama et. al. teach that dummy area smaller than allowable it is removed as in Fig. 5D, removal of area 22e is removal of excess metal from the dummy metal fill pattern.

Regarding claim 3, Motoyama et. al. teach that region 22e is seen as a sliver of metal.

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Regarding claim 4, Motoyama et. al.'s sliver is created by merging the dummy fill area with the dummy fill pattern, thus is also as, the margin area as it is removed from the dummy fill pattern, 22e is created; and subsequently removed in Fig. 5D.

Claim 5 was canceled.

Regarding claim 6, Motoyama et. al. fail to select the alternative functional circuitry to be alike to that near the functional circuitry. Eden et. al. teach dummy features 50 similar in size and shape to other metal lines (lines 41-42 column 6) for the purpose of reducing loading effect (line 34, column 6, Eden et. al.). Since Eden et. al. and Motoyama et. al. are all from the same field of endeavor, the purpose disclosed by Eden et. al. would have been recognized in the pertinent art of Motoyama et. al.. It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute Eden et. al.'s dummy features which are alike that of functional circuitry nearby, namely the metal lines, for the reticular pattern generated dummy features taught by Motoyama et. al..

Regarding claim 8, Motoyama et. al. teach their method for semiconductor device manufacturing, (lines 9-10 column 11), that would inherently include applying the method step of the dummy metal fill pattern is created on a metal layer of an LCOS array since an LCOS array falls within the scope of semiconductor devices, and metal layers exist on LCOS arrays. Regarding claim 9, Motoyama et. al. teach their method for semiconductor device manufacturing, (lines 9-10 column 11), that would inherently include applying the method step of the dummy metal fill pattern is created on a layer under a mirror layer of an LCOS array since such layers exists in an LCOS array. Regarding claim 10, Motoyama et. al. teach their method for semiconductor device manufacturing, (lines 9-10 column 11), that would inherently include applying the method step of the dummy metal fill pattern is created on a layer of reflective LCOS array since such layers exists in an LCOS array.

Claims 11 and 12 were canceled.

Regarding claim 13, Motoyama et. al. teach of growing the margin by a width W off the functional circuitry, in line 28, column 7.

3. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Motoyama et. al. USPN 6,099,992 in view of Chrysostomides et. al. USPN 6,441,469.

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Regarding claim 23, Motoyama et. al. teach a reticular pattern for metal fill pattern selection and fill unfilled area with the pattern but fail to make the selection from functional circuitry of the array.

Chrysostomides et. al. teach array (line 3 abstract, semiconductor configuration, lines 6-10 column 4) and selecting functional circuitry for the dummy features for purposes of uniform surroundings (lines 38-45, column 2) and raising radiation tolerance (line 30, column 2). Since Chrysostomides et. al and Motoyama et. al. are all from the same field of endeavor, the purposes disclosed by Chrysostomides et. al would have been recognized in the pertinent art of Motoyama et. al.. It would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute Chrysostomides et. al's dummy features for the reticular pattern taught by Motoyama et. al. for an array that would require selection of metal fill pattern from functional circuitry inherently to construct the dummy circuitry.

***Allowable Subject Matter***

4. The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 24, fills a partially filled area with a portion of the metal fill pattern was not found..

Regarding claim 7, the alternative functional circuitry is a selected portion of functional circuitry from a metal layer on which the dummy metal fill pattern is to be used. One might envision this as a windowed selection on a computer screen of the circuitry during the design procedure.

***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael K. Luhrs whose telephone number is 703-305-2864. The examiner can normally be reached on M-F, 8-5.
7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard T. Elms can be reached on 703-308-2816. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.
8. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Michael K. Luhrs  
November 3, 2003



WILLIAM J. MCGOVERN  
PATENT EXAMINER